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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/404,903	09/24/1999	DONALD F. AULT	PO9-99-046	8888

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EXAMINER

NGUYEN, VAN, H

ART UNIT	PAPER NUMBER
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2126

DATE MAILED: 01/29/2004

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application

09/404,903

Applicant(s)

AULT ET AL.

Examiner

VAN H NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 11-23, 27-33, and 37-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 24-26, and 34-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is in response to amendment A filed November 13, 2003. Claims 11-23, 27-33, and 37-43 are withdrawn from consideration. Claims 1-10, 24-26, and 34-36 are presented for examination.
2. Please cancel non-elected claims 11-23, 27-33, and 37-43 in the next response.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-10, 24-26, and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lumetta et al.** "Managing Concurrent Access for Shared Memory Active Messages" IEEE, 1998, pages 272-278 in view of **Kessler et al.** (U.S.5,841,973).

5. As to claim 1, Lumetta teaches (pages 272-275) the invention substantially as claimed including a method of performing a recoverable operation on a message queue (*message queues*) in response to a request (*request*) by a caller (*senders*) in an information handling system (*message-passing systems*), the method comprising the steps of:

- storing a use count (*a ticket counter*) for the message queue;

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- storing a use count flag (*a lock indicator*) for the caller indicating whether the caller has acquired a lock (*a lock*) on the queue ;

- updating the use count (*the ticket counter is incremented automatically...it increments the service counter*); and

- atomically with updating the use count, updating the use count flag to indicate whether the caller has acquired a lock on the message queue (*when releasing a lock, a process moves the lock indicator from its slot into the next*).

Lumetta does teach a use count for the message queue, but is silent on “a use count for the message queue indicating the number of tasks accessing the queue.”

Kessler teaches a use count for the message queue indicating the number of tasks accessing the queue (*limit field 72 indicates a number of slots in message queue 60; col.8, lines 30-61*).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Kessler with Lumetta because it would have provided an efficient mechanism for serializing operations on the message queue.

6. **As to claim 2**, Lumetta teaches the recoverable operation is a locking operation, the step of updating the use count comprising the step of incrementing the use count, the step of updating the use count flag comprising the step of updating the use count flag to indicate that the caller has acquired a lock on the message queue (page 275).

7. **As to claim 3**, Lumetta teaches the recoverable operation is an unlocking operation, the step of updating the use count comprising the step of decrementing the use count, the step of updating the use count flag comprising the step of updating the use count flag to indicate

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that the caller has released a lock on the message queue (page 275).

8. **As to claim 4**, Lumetta teaches comparing the use count with a previously read use count atomically with the updating steps, the updating steps being performed only if the use count matches the previously read use count (page 275).

9. **As to claim 5**, Lumetta teaches the use count is stored in a message queue table having an entry for the message queue (page 273).

10. **As to claim 6**, Lumetta teaches the message queue table also stores a pointer to the message queue, the method comprising the further step of comparing the pointer with a previously read pointer atomically with the updating steps, the updating steps being performed only if the pointer matches the previously read pointer (pages 274-275).

11. **As to claim 7**, Lumetta teaches the message queue table also stores an identifier of the message queue (page 275).

12. **As to claim 8**, Lumetta teaches the use count flag is stored in a control block for the caller (page 274).

13. **As to claim 9**, Lumetta teaches the control block for the caller also contains an identifier of the message queue (page 275).

14. **As to claim 10**, Lumetta teaches the updating steps are performed by executing a single atomic instruction that updates the use count and, concurrently therewith, updates the use count flag (page 275).

15. **Claim 24** is directed to an apparatus for performing the method of claim 1, and is similarly rejected under the same rationale.

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16. **As to claim 25**, Lumetta teaches means for comparing the use count with a previously read use count atomically with the updating operations, the updating operations being performed only if the use count matches the previously read use count (page 275).

17. **As to claim 26**, Lumetta teaches the use count is stored in a message queue table having an entry for the message queue, the message queue table also storing a pointer to the message queue, the method comprising the further step of: comparing the pointer with a previously read pointer atomically with the updating operations, the updating operations being performed only if the pointer matches the previously read pointer (pages 274-275).

18. **Claim 34** is directed to a program storage device readable by a machine for implementing the method of claim 1, and is similarly rejected under the same rationale.

19. **As to claims 35-36**, note the rejection of claims 25-26 above. Claims 35-36 are the same as claims 25-26, except claims 35-36 are program storage device claims and claims 25-26 are apparatus claims.

Response to Arguments

20. Applicant's arguments filed November 13, 2003 have been fully considered but they are not persuasive.

21. In the remarks, Applicant argued in substance that (1) it is not true the Lumetta discloses applicants' claimed invention except for a use count of indicating a count of tasks accessing the queue. Most notably, the ticket counter does not store a use count indicating a count of tasks

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accessing the queue; (2) Nor does Kessler teach modifying Lumetta as suggested by the Examiner to provide a use count of indicating a count of tasks accessing the queue.

22. Examiner respectfully traverses Applicant's remarks:

A. As to point (1), Applicant is attacking the references individually. In fact, the combination meets the claim limitations. As shown through the mapping provided in the claim rejections, Lumetta teaches storing a use count (*a ticket counter; page 275*) and Kessler teaches a use count for the message queue indicating the number of tasks accessing the queue (*limit field 72 indicates a number of slots in message queue 60; col.8, lines 30-61*).

B. As to point (2), Kessler does provide a use count of indicating a count of tasks accessing the queue (fig.5 and col.8, lines 30-61).

Accordingly, the combination of Lumetta and Kessler meets the limitations as broadly claimed by Applicant.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

24. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN H NGUYEN whose telephone number is (703) 306-5971. The examiner can normally be reached on Monday-Thursday from 8:30AM - 6:00PM. The examiner can also be reached on alternative Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703) 305-9678.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9000.

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Any response to this action should be mailed to:

Commissioner for Patents

PO Box 1450

Alexandria, VA 22313-1450

or fax to:


(703) 746-7239 (for formal communications intended for entry)

(703) 746-7238 (for After Final communications)

(703) 746-7240 (for informal or draft communications)

VHN

January 20, 2003


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